

PLANT & PEST ADVISORY

FRUIT EDITION \$1.50

JULY 1, 1997



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Weed Control in Fruit

Bradley A. Majek, Ph.D., Weed Science

◆ Small Fruit

Strawberry: Apply Formula 40 seven days before mowing old leaf growth if most of the **broadleaf weeds** are taller than the crop, or tank-mix with the preemergence herbicides and apply immediately after mowing if most **broadleaf weeds** are below the crop canopy. Apply Devrinol, unless the full labeled rate for the year was applied in late fall or early spring, and Sinbar. Irrigate within 2 days if rainfall does not occur after application to make the preemergence herbicides available to the emerging weed seedlings. Delay irrigation for 12 hours if postemergence herbicide(s) are applied to allow time for penetration into the leaves, or weed control failure may result. Use care not to exceed the total recommended rate of any herbicide for an acre in one year. Consult the [Commercial Vegetable Production Recommendations](#) for rates and additional information.

◆ Tree Fruit

Perennial Weed Control: Established **perennial weeds** in orchards are easily evident now, when residual weed control programs have controlled the **annuals**. Control of **perennials** can be more difficult and may require special attention. Herbicide applications *must* be made at the right time of year to achieve control of the roots as well as the foliage of **perennial weeds**. Failure to apply herbicides at the right time often causes poor results. Weeds must be "actively growing" to move herbicides that are absorbed by the leaves into the roots. Do *not* treat during periods of heat, drought, or other severe stress that adversely affects growth.

Virginia Creeper can be controlled in late June to early July with 2,4-D. Before spraying, remove any **creeper** in the tree and carefully lay it in the row. Complete coverage is necessary for excellent control. Caution: 2,4-D can drift as fine spray particles or as a vapor and harm sensitive vegetable and ornamental crops in adjacent fields. Do *not* apply during periods of high wind to avoid spray drift. Do *not* apply when the temperature *or* the humidity is high and the air is dead calm to reduce the risk of vapor drift. Consult the [Commercial Tree Fruit Production Recommendations](#) for rates and additional information.

Canada thistle can be controlled in June or early July when in full bloom with Roundup 4SC. Broadcast 3.0-4.0 lb ai/a (3-4 qt/a) or spot treat by spraying to the point of runoff with a 2% solution in a knapsack sprayer. Treat before thistle sets seed and dies back later in July and August.

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WEEDS FROM PAGE 1

The most effective time to treat **Canada thistle** with Roundup is to spray fall regrowth in early October when new fall thistle growth is 8-10 inches tall, but before frost. Use the same rates recommended for the early summer treatment.

Goldenrod and white heath (wild) aster can be controlled in May or June after spring growth has reached 10-12 inches. Broadcast 2.0-4.0 lb ai/a (2-4 qt/a) or spot treat by spraying to the point of runoff with a 2% solution in a knapsack sprayer. Good coverage of the foliage is necessary for effective control. Adjust spray boom height or use a boom that leans over tall weeds at the proper height for spraying.

Poison ivy is more difficult to control than **Virginia Creeper**. The weed must be removed from the tree and kept on the ground prior to treatment. Apply Roundup at 4.0 lb ai/a (1 gal/a) in July or August after the weed has bloomed and has green fruit. **Poison ivy** flowers in late June or early July. Look for flowers and fruits on older mature plants that receive full or partial direct sunlight. Do *not* allow Roundup to contact the foliage or young green bark on new fruit tree shoots. Treatment earlier in the season or after fall colors appear are less effective. □

Fruit Meeting Calendar

July 24 - 26, 1997 - NJ Peach Festival, Rt. 77 - 4-H Fairgrounds, Mullica Hill, NJ
Contact: Jerry Frecon, RCE of Gloucester County, 1200 N. Delsea Drive, Clayton, NJ 08312, 609-863-0110

July 31, 1997 - Pennsylvania Tree Fruit Growers Field Day, Penn State Fruit Research and Extension Center, Biglerville, PA
Contact: Dr. George Greene 717-677-6116

Sept. 11, 1997 - Variety Showcase and Open House, Rutgers Fruit Research and Extension Center, Cream Ridge, NJ
Contact: Dr. Joe Goffreda 609-758-7311

Pennsylvania Tree Fruit Growers Field Day

Submitted by Jerome L. Frecon, Gloucester County Agricultural Agent

The following article was excerpted from Penn Fruit News, Vol. 16, No 9 - June 10, 1997.

Tree fruit growers in Pennsylvania and neighboring states are invited to a field day July 31, from 2:00 to 8:00 p.m. at Penn State's Fruit Research and Extension Center. The Research Center is located at 290 University Drive, just off Route 234 west of Biglerville in Adams County. Parking and admission are free. A barbecued chicken dinner will be offered to those making reservations in advance of the July 21 deadline (\$5.00/person). Visitors will tour orchard research plots and hear presentations highlighting new research and extension programs.

Entomology will include the latest information on new control tactics for managing pests and encouraging beneficial organisms, such as hydrophobic clay, insect growth regulators, other new chemistries, and how best to manage resistance to the new and older products. Participants will also learn the latest on how to use sex pheromone traps for monitoring and what is new in pheromone trap designs.

Extension Entomology will discuss use of degree-days to predict scouting and control timing for apple insects. Living and preserved specimens of many tree fruit pests will be on display. Apple maggot infested apples will be displayed for those not familiar with this pest. The program will include use of internet resources for tree fruit entomology.

Postharvest Horticulture will include a brief discussion of the work conducted over the past two seasons, especially on varieties, a possible alternative to postharvest fungicides, and storage of fruit from reduced pesticide trials.

Horticulture will present information on peach rootstocks and peach bloom delay tactics. Apple thinning and rootstock evaluations will be seen. There may be an optional tour in the evening of trials of an experimental shoot growth control plant growth regulator.

Plant Pathology will present the latest research data on disease management including fire blight of apple, brown root of stone fruits, and the efficacy of new fungicides and application timing for control of early-season and summer diseases of apple. An optional tour of nearby research plots will be offered.

Nematology will present information on the management of plant-parasitic nematodes in orchards, including the use of chemicals and cultural practices. Recent work on the use of green manure cover crops will be highlighted. Included in the presentation will be a discussion of the pros and cons of different methods and the future of nematode control for tree fruit production.

Contact the Research Station at 717-677-6116 for details. □

Fruit Tree Nutrition Notes

Robert Belding, Ph.D., Pomology

This spring had been cool and tree growth was slow. When the weather finally warmed up, the chlorotic new shoot growth on many fruit trees in parts of Gloucester and Salem counties was yellow enough to cause concern.

The following symptoms were observed:

- Interveinal chlorosis on all new growth
- Vigorous growth had most obvious symptoms
- All varieties and all age trees affected
- Symptoms appeared on peaches, plums, and apples, at several locations in the area

Suspecting a nutritional problem, one grower sent off tissue samples for analysis. Iron deficiency was indicated. Soil pH affects iron availability; if pH is too high, iron will become limiting. However, tests showed that the soil was in the proper range for iron availability. Iron is not a common problem in New Jersey. Yellowing of new growth is also symptomatic of other micronutrient deficiencies, such as manganese and zinc, which are common problems in New Jersey.

Dr. Joe Heckman, Specialist in Soil Science at Rutgers Cooperative Extension, suggested this simple, quick and inexpensive test to determine the origin of a nutrient deficiency symptom. Apply a dilute spray of the suspected nutrient or nutrients to individual branches of affected trees. If the applied spray matches the deficiency, the branches respond and green up in 2 or 3 days and you have determined the cause. This test works on most crops, not just tree fruits.

In this case, Mn, Zn and Fe were applied separately to chlorotic trees. After two days, there was no response from the Mn and Zn trees, but those sprayed with iron (Fe) were greener in comparison. It appears that the rapid burst of new growth 'out-grew' the trees' ability to supply iron to new growth. The trees have returned to normal. Joe Heckman suggests that adding a nutrient cocktail to a spray is not expensive and moderate applications do not pose a threat to the crop. However, caution should be taken with foliar-applied nutrients near fruit harvest because iron has been associated with the postharvest peach inking disorder.

Although this case was probably weather-related, nutrient deficiencies can easily be prevented by regular nutrient analysis of soils and leaf tissue. After having the tests done, use the information to customize nutrient application. It is just as harmful to over-apply some elements as it is to be deficient. If in doubt, contact your Area Fruit Extension Agent. □

Ag Secretary Announces New 'Farm Link' Program

New Jersey Agriculture Secretary Art Brown, Jr., announced that farmers who want to expand their farms or prospective farmers who want to start farming will be able to take advantage of a newly created Farm Link program to be part of the state's Farmland Preservation Program (FPP).

"The Farm Link program will match land owners who have farm property to sell with farmers looking for reasonably priced land," Brown said. Brown chairs the State Agriculture Development Committee which administers the FPP.

"New Jersey farmers often need to expand their operations in order to achieve greater efficiency on the farm but, with our land values so high, it can be difficult to find good agricultural land," Brown said. "We also get many inquiries from people who are ready to retire from farming or have no family members who want to continue to farm but would like to make sure the land stays in production. Farm Link will give us a way to help farmland buyers and sellers get together."

Brown noted that Farm Link can also help people who want to start farming and are looking for affordable farmland since Farm Link will be partnered with the state's Farmland Preservation Program. "We've already preserved almost 38,000 acres of land for agricultural use now and in the future," Brown said. "Since the development rights for this acreage have already been purchased, the land can be sold at the more affordable agricultural value."

In the coming weeks, questionnaires will be distributed to potential farmers as well as retiring farmers and relocating land owners. The information gathered will be kept in a data base and made available at no charge to buyers and sellers.

Farmers who want to sell their land for agricultural use, and want to use Farm Link to locate possible buyers, will be asked to provide information concerning property location, acreage, use restrictions, past and current crop or livestock production.

Both unrestricted farmland and deed-restricted farmland enrolled in the Garden State's permanent farmland preservation program will be tracked through Farm Link.

Ultimately New Jersey's Farm Link program will become an active member of the National Family Farm/Ranch Transition Network, a national clearinghouse for land-link programs that can also offer the state's Farm Link participants to buyers and sellers across the country.

Brown urged people to contact the Farmland Preservation Program at 609-984-2504 if they have agricultural land to sell or are looking for agricultural land to buy. □

Fruit IPM

Dean Polk, IPM Agent, Fruit

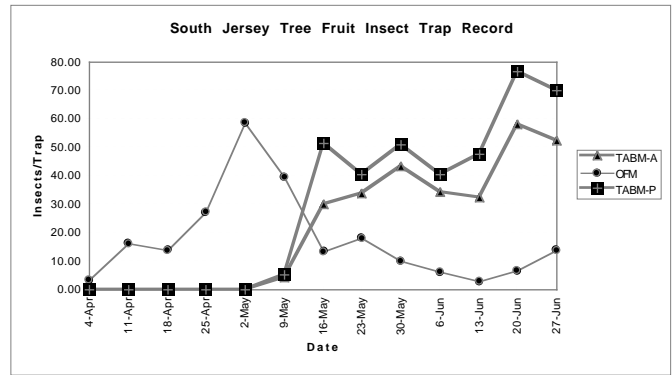
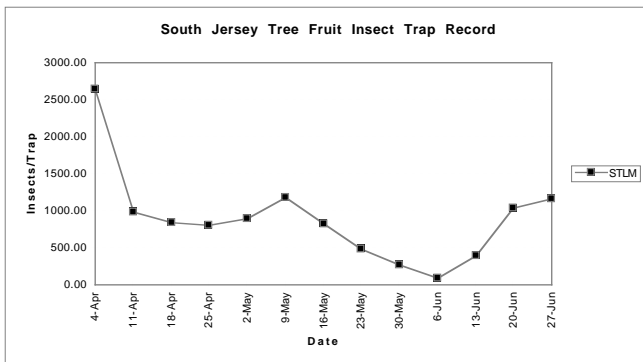
◆ Peach

✓ **Oriental Fruit Moth (OFM):** The second adult flight is well underway (see graphs) with trap catches about double what they were the previous week (avg = 14/trap). One set of traps placed near a young unsprayed planting had over 100 moths per trap. The practice of not spraying new plantings can provide a kind of “insect nursery” which will increase the pest pressure seen around these areas. OFM is the principal insect target at this time as long as trap captures exceed 6 to 8 moths per trap.

✓ **Catfacing Insects:** Some new catfacing injury was seen this past week, but only at light levels. Proper ground cover management is very important under the present weather conditions, since bugs tend to move up to the more succulent feeding grounds of young peach fruit when ground cover hosts dry up. If the ground cover hosts are not present in the first place, then few insects are available to move into the trees.

✓ **Tufted Apple Budmoth (TABM):** While TABM adults continue to be caught in traps, no new egg masses or larvae are being seen. Partially grown larvae are at the 2nd to 4th instar stage. No additional treatments for TABM are needed. While larvae may be present on some farms, this stage is almost impossible to contact with insecticides, making additional treatments a waste of time and money.

✓ **Bacterial spot:** No new infections have been seen during the last 2 weeks. If all infected leaves drop within the near future, then disease inoculum will be minimized, permitting the removal of bacterial spot sprays. However, growers should be aware that irrigation practices will help initiate new infections when bacterial spot is already present in the orchard. Fruit infections have been moderate to high with up to 12% of the fruit infected in some southern locations.



◆ Apple

✓ **Tufted apple budmoth (TABM):** See timing listed under peach, above.

✓ **Codling moth (CM):** While insect pressure is low on most farms, insecticide for CM should be included when trap counts exceed 5 moths per trap per week.

✓ **Spotted Tentiform leafminer (STLM):** The second adult flight is well underway (see graph). Additional sap feeding mines are also present. Treatments should be applied when mine counts exceed .5 to 1 mine per leaf, and the majority of new miners are sap feeders. While the target stage should always be young sap feeders, we did see one case this past Friday where Provado was applied and killed sap feeders plus about 40 to 50% of older tissue feeders. Therefore the use of Provado may provide a wider timing window at this time of year.

✓ **Aphids (apple aphid, spirea aphid):** Aphid colonies are still present in many orchards, but have declined with the use of STLM materials, and the hardening off of some trees. The presence of Syrphid fly larvae, lady beetles and other predators will further decrease the aphid population if permitted. Aphids *do not* transmit fire blight. Although fire blight is present, much of its spread may be due to other insects, management practices, and weather.

✓ **Potato leafhopper (PLH):** Several leafhopper species may be present in the orchard at any one time. While few white apple leafhoppers (WALH) are present, potato leafhoppers are becoming more common. Potato leafhopper adults are yellow/green while WALH are white. PLH moves diagonal to sideways, and often feed on the leaf margins, particularly on younger leaves. The adult can also be distinguished by the presence of 6 white spots on the top of the pronotum (the area just in back of the head). Recognizing PLH is important since it is likely to spread **fire blight** when both the disease and insect are present in the orchard. WALH does not spread fire blight, but because PLH feeds on the vascular tissue, it is a much more likely candidate.

✓ **Mites:** Red mites are present at over 5 mites per leaf in one orchard where Savey was applied pre-bloom. Fortunately, predators are present and increasing in this block. Significant mite populations are also present at 1

SEE IPM ON PAGE 5

location where Agrimek was used. Mites are increasing in many locations, partially due to the hot, dry conditions that are favorable for mite development. One farm has high mite levels in Jersey Red blocks, usually not a favored host for ERM. However, early season pyrethroids were used at this location, and few predators are present. Pyramite has worked well both at the full labeled rate (4.4 oz/A) and less, where trees are smaller.

Tree Fruit Pest Degree Day Accumulations Since 1st Catch - 6/30/96

Site	Biofix/1 st Catch Date & DD - TABM	Biofix/1 st Catch Date & DD - CM
Hammonton - At. Co.	5/2 1117	5/9 791
Hardingville - Glou. Co.	4/30 1150	4/30 858
Bridgeton - Cumb. Co.	5/1 1147	5/2 844
Princeton - Mercer Co.	5/12 992	5/5 780
Oldwick - Hunt. Co.	5/17 902	5/16 685
Hackettstown - War. Co.	5/22 818	5/9 716
Spray target after biofix/1st catch	Alt Mid Appl. at 490 (0-5% hatch), 625 (25-30% hatch), 763 (50-55% hatch), 898 (75-80% hatch) (1st brood), and 2228 (0-5% hatch), 2415 (25-30% hatch), 2605 (50-55% hatch), 2795 (75-80% hatch) (2nd brood)	250 DD plus 2 weeks later (1st generation), 1250-1300 DD plus 2-3 weeks later (2nd generation)

◆ Trap Averages

South Jersey Tree Fruit

Week Ending	RBLR	STLM	TBM-A	CM	AM	OFM	TBM-P	LPTB	PTB
5/16	7.0	822	30.2	2.6	—	12.9	50.6	0.7	—
5/23	2.8	478	33.8	9.3	—	18.3	40.4	28.1	0.02
5/30	0.8	270	43.4	3.7	—	9.6	50.2	19.1	0.05
6/6	0.0	96	34.1	1.9	—	5.8	40.0	30.2	0.2
6/13	0.1	390	32.6	2.2	—	2.6	44.4	21.4	0.04
6/20	3.1	1036	58.0	4.9	—	5.4	74.3	19.9	0.5
6/27	26.9	1169	52.2	3.7	—	13.8	69.9	31.1	0.4

North Jersey Tree Fruit

Week Ending	RBLR	STLM	TBM-A	CM	AM	OFM	TBM-P	LPTB	PTB
5/16	10.7	902	1.0	1.3	—	6.0	0.1	0.1	—
5/23	2.0	157	1.9	1.2	—	4.1	0.6	0.9	—
5/30	2.4	252	5.8	2.6	—	6.7	2.6	0.5	0.1
6/6	0.3	26	3.0	3.1	—	4.8	2.3	5.3	0.6
6/13	0.05	268	8.4	3.5	—	4.2	6.8	21.6	1.5
6/20	0.1	374	21.1	5.5	0.0	2.5	19.2	22.3	1.5

Blueberry

Atlantic Co.

Week Ending	RBLR	OBLR	CBFW	SNLH	BBM
5/16	7.4	0	0.5	—	—
5/23	1.5	0	2.6	—	—
5/30	0.5	0.5	12.0	—	—
6/6	0	3.1	8.1	—	—
6/13	0.2	8.3	2.2	0.0	0.0
6/20	35.1	14.0	0.6	0.5	0.0
6/27	105	13.4	0.6	1.8	.02

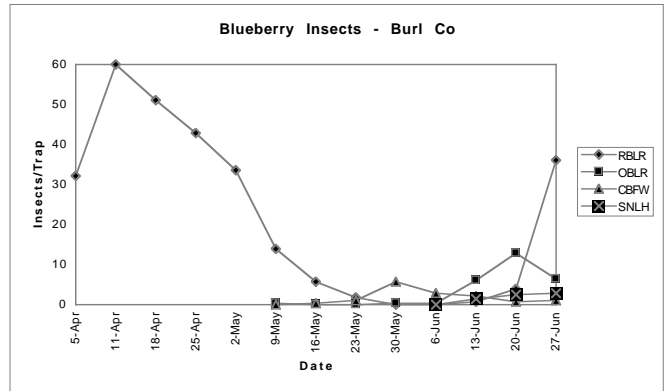
◆ Blueberry

✓ **Leafrollers and other Lept:** Both redbanded leafroller (RBLR) and obliquebanded leafroller (OBLR) trap counts are high in comparison to some years at this time (see graphs). Egg laying is underway. These insects should be part of the spray program at the present time, especially in Atlantic County where trap counts are the highest. Malathion is not particularly good for leafroller control. Lannate or Imidan are suggested materials.

✓ **Aphids:** Aphid populations are present in about 50% of our samples. Most colonies are under 5 aphids per colony.

✓ **Sharpnosed leafhopper (SNLH):** SNLH activity has increased again since last week. Treatments for SNLH should be applied along with other pests at this time.

✓ **Blueberry maggot:** Adults are present in both managed and wild sites. Counts at wild sites average 8.7 flies per trap, while counts in managed fields average .02 to .3 flies per trap. Since our first catch in managed fields was on 6/19, the first treatments should have already been applied.



Burlington Co.

Week Ending	RBLR	OBLR	CBFW	SNLH	BBM
5/16	5.6	0	0.3	—	—
5/23	1.8	0	0.9	—	—
5/30	0.06	0.4	5.6	—	—
6/6	0	0.4	2.9	—	—
6/13	0.8	6.1	2.2	1.5	0.0
6/20	4.0	12.8	0.8	2.6	0.0
6/27	36	6.5	1.1	2.9	0.3

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